final report

April 11, 2022

Traffic Impact Study

Broad Run Subdivision 8000 Broad Run Road Louisville, KY

Prepared for

Louisville Metro Planning Commission





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INTRODUCTION

The development plan for the Broad Run subdivision on Broad Run Road in Louisville, KY shows 243 single family lots with 190 multi-family townhouse units. **Figure 1** displays a map of the site. Access to the subdivision will be from two entrances on Broad Run Road. The purpose of this study is to examine the traffic impacts of the development upon the adjacent highway system. For this study, the impact area was defined to be the intersections of Broad Road with Seatonville Road, Seatonville Road with Brentlinger Lane and Billtown Road, and the proposed entrances.



Figure 1. Site Map

EXISTING CONDITIONS

Broad Run Road is a Metro Louisville maintained road with an estimated 2021 ADT volume of 1,300 vehicles per day south of Seatonville Road, as estimated from the turning movement count. The road is two lanes with nine-foot lanes and a one-foot shoulder. The speed limit is 35 mph. There are no sidewalks. The intersection with Seatonville Road is controlled with a stop sign on Seatonville Road. The intersection of Seatonville Road at Brentlinger Lane is controlled with a stop sign on Brentlinger Lane.

Peak hour traffic counts for the intersections were obtained on April 13, 2021. The a.m. and p.m. peak hour varied between the intersections. **Figure 2** illustrates the existing a.m. and p.m. peak hour traffic volumes. The figure is illustrative and is not reflective of traffic control.

Received April 11, 2022

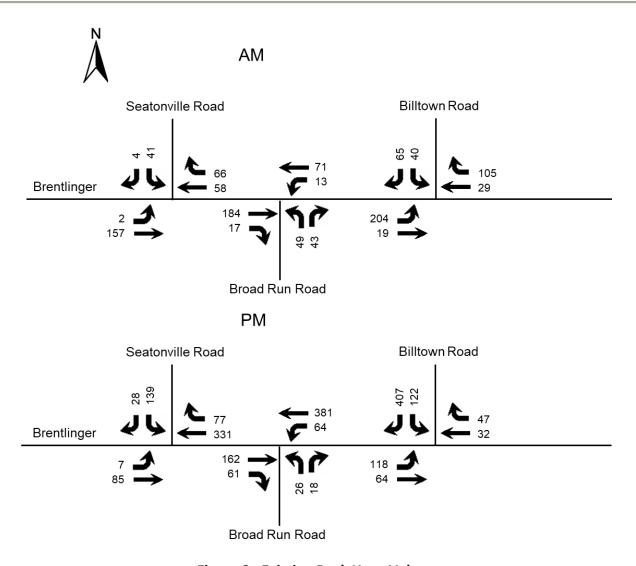


Figure 2. Existing Peak Hour Volumes

FUTURE CONDITIONS

The project completion date is 2028. An annual growth rate of 1.0 percent was applied to all volumes east of the intersection of Brentlinger Lane and Seatonville Road. **Figure 3** displays the 2028 No Build peak hour volumes.

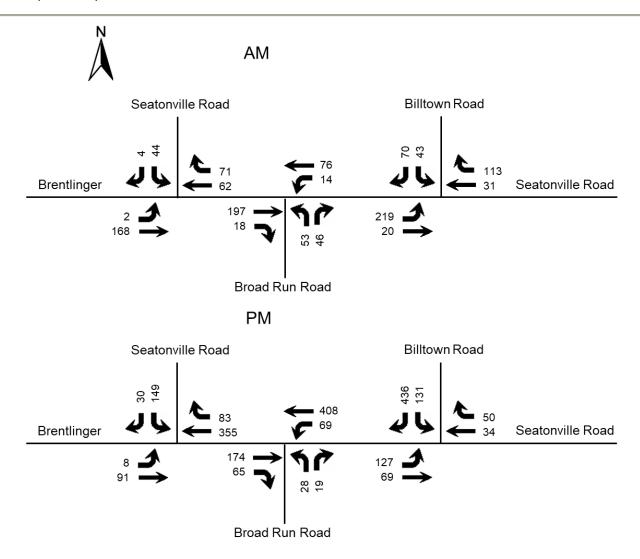


Figure 3. No Build Peak Hour Volumes

TRIP GENERATION

The Institute of Transportation Engineers <u>Trip Generation Manual</u>, 11th Edition contains trip generation rates for a wide range of developments. The land uses of "Single Family Detached (210)" and "Multi-family Low-Rise (220)" were reviewed and determined to be the best match. The trip generation results are listed in **Table 1**. The trips were assigned to the highway network with the percentages shown in **Figure 4**. **Figure 5** shows the trips generated by this development and distributed throughout the road network during the peak hours. **Figure 6** displays the individual turning movements for the peak hours when the development is completed.

Received April 11, 2022

Table 1. Peak Hour Trips Generated by Site

	A.M.	Peak I	lour	P.M. Peak Hour			
Land Use	Trips	In	Out	Trips	In	Out	
Single Family Detached (243 lots)	167	43	124	229	144	85	
Multi-family Low-Rise (190 units)	82	20	62	102	64	38	
TOTAL	249	186	63	331	208	123	

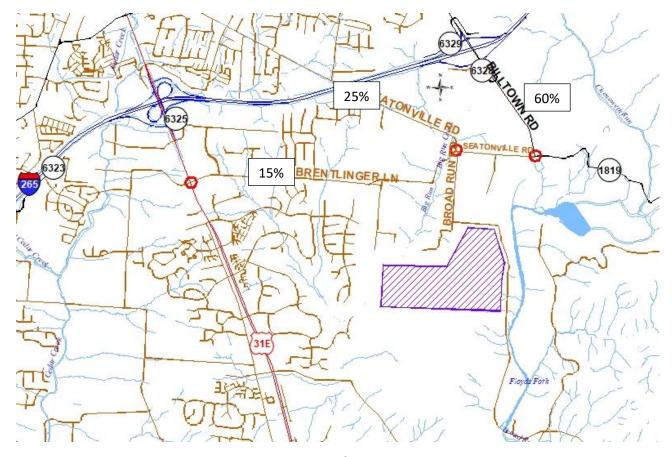


Figure 4. Trip Distribution Percentages

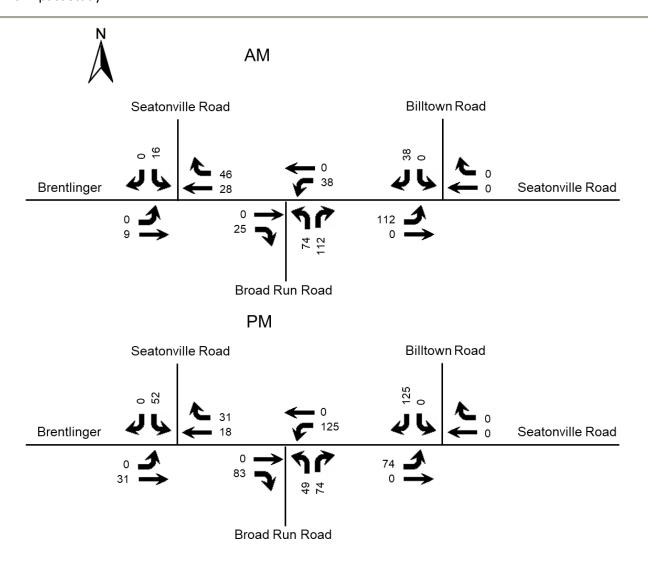


Figure 5. Peak Hour Trips Generated by Site

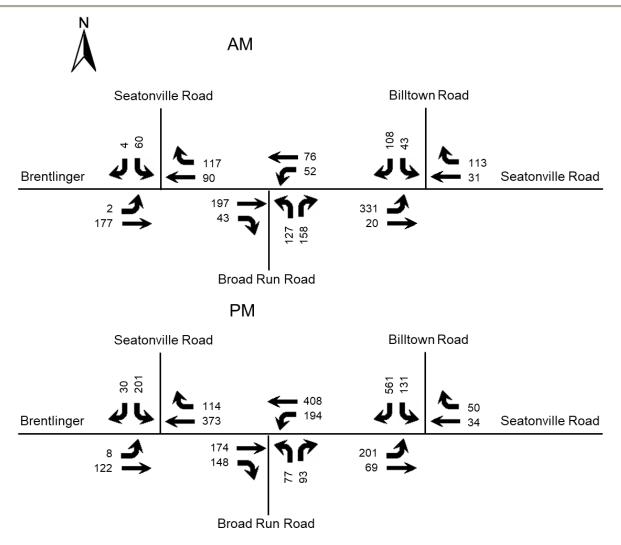


Figure 6. Build Peak Hour Volumes

ANALYSIS

The qualitative measure of operation for a roadway facility or intersection is evaluated by assigning a "Level of Service". Level of Service is a ranking scale from A through F, "A" is the best operating condition and "F" is the worst. Level of Service results depend upon the facility that is analyzed. In this case, the Level of Service is based upon the average delay experienced at an intersection.

To evaluate the impact of the proposed development, the vehicle delays at the intersections were determined using procedures detailed in the <u>Highway Capacity Manual</u>, 6th edition. Future delays and Level of Service were determined for the intersections using the HCS Streets (version 7.9.5) software. The delays and Level of Service are summarized in **Table 2**.

Table 2. Peak Hour Level of Service

		A.M.			P.M.	
Approach	2021	2028	2028	2021	2028	2028
Дричасн	Existing	No Build	Build	Existing	No Build	Build
Billtown Road at Seatonville Road						
Seatonville Road Eastbound	Α	Α	Α	Α	Α	Α
Seatonville Road Lastbound	8.0	8.1	8.5	7.6	7.7	7.8
Billtown Road Southbound	В	В	С	С	С	Е
Billowii Road Souliboulid	12.3	12.9	16.0	16.9	19.4	40.4
Seatonville Road at Broad Run Road						
	Α	Α	Α	Α	Α	Α
Seatonville Road Westbound (left)	8.2	8.3	8.0	7.9	7.9	8.7
	В	В	С	В	С	С
Broad Run Road Northbound	11.1	11.4	15.6	14.4	15.4	21.7
Seatonville Road at Brentlinger Lane						
Seatonville Boad Westbound (left)	Α	Α	Α	Α	Α	Α
Seatonville Road Westbound (left)	7.4	7.4	7.5	8.5	8.7	9.1
Brentlinger Lane Eastbound	Α	Α	Α	В	В	В
Brendinger Lane Eastbound	9.4	9.5	9.7	11.2	11.8	12.9

Key: Level of Service, Delay in seconds per vehicle

The entrances were evaluated for turn lanes using the Kentucky Transportation Cabinet Highway Design Guidance Manual dated July, 2020. Using the volumes in Figure 6, no turn lanes will be required at the entrances. The intersection of Broad Run Road at Seatonville Road does meet the volume warrant for a left turn lane and is included in the Build analysis above. Until the proposed improvements to combine the Brentlinger Lane/Seatonville Road/Broad Run Road can be constructed, the traffic control for the Brentlinger Lane intersection should be modified to add a stop sign on Seatonville Road southbound approach. This will eliminate the queue for left turns to Brentlinger Lane provide adequate sight distance for Broad Run Road.

CONCLUSIONS

Based upon the volume of traffic generated by the development and the amount of traffic forecasted for the year 2028, there will be a manageable impact to the existing highway network, with Levels of Service remaining within acceptable limits. The intersection of Broad Run Road at Seatonville Road does meet the volume warrant for a left turn lane. Until the proposed improvements to combine the Brentlinger Lane/Seatonville Road/Broad Run Road can be constructed, the traffic control for the Brentlinger Lane intersection should be modified to add a stop sign on Seatonville Road southbound approach. This will eliminate the queue for left turns to Brentlinger Lane provide adequate sight distance for Broad Run Road.

Broad Run Subdivision Broad Run Road Traffic Impact Study

APPENDIX

Traffic Counts

Classified Turn Movement Count || All vehicles

Marr Traffic DATA COLLECTION www.marrtraffic.com

Broad Run, KY

Site 4 of 4

Billtown Rd Seatonville Rd KY-1819 Seatonville Rd Date

Tuesday, April 13, 2021

Lat/Long 38.136631°, -85.538376°

Weather

Cloudy 61°F

0700 - 0900 (Weekday 2h Session) (13-04-2021)

All vehicles

TIME
0700 - 0715
0715 - 0730
0730 - 0745
0745 - 0800
Hourly Total
0800 - 0815
0815 - 0830
0830 - 0845
0845 - 0900
Hourly Total
Grand Total
Approach %
Intersection %
PHF

	So	uthbou	nd			Е	astboun	ıd			W	estbou	nd		i
	Bi	illtown F	₹d			Sea	tonville	Rd			KY-1819	9 Seator	ville Rd		
Left		Right	U-Turn	App	Left Thru U-Turn App				Thru	Right	U-Turn	App	Int		
4.1		4.2	4.3	Total	4.4	4.5		4.6	Total		4.7	4.8	4.9	Total	Total
4		4	0	8	39	2		0	41		5	22	0	27	76
8		8	0	16	48	2		0	50		7	22	0	29	95
4		14	0	18	39	4		0	43		8	36	0	44	105
8		15	0	23	66	6		0	72		10	26	0	36	131
24		41	0	65	192	14		0	206		30	106	0	136	407
16		16	0	32	57	7		0	64		5	20	0	25	121
12		20	0	32	42	2		0	44		6	23	0	29	105
5		17	0	22	35	2		0	37		5	21	0	26	85
13		14	0	27	17	5		1	23		8	20	0	28	78
46		67	0	113	151	16		1	168		24	84	0	108	389
	-														
70		108	0	178	343	30		1	374		54	190	0	244	796
39.33		60.67	0.00	-	91.71	8.02		0.27	-		22.13	77.87	0.00	-	
8.79		13.57	0.00	22.36	43.09	3.77		0.13	46.98		6.78	23.87	0.00	30.65	
															ĺ
0.63		0.81	0.00	0.82	0.77	0.68		0.00	0.77		0.73	0.73	0.00	0.76	0.88

1600 - 1800 (Weekday 2h Session) (13-04-2021)

TIME
1600 - 1615
1615 - 1630
1630 - 1645
1645 - 1700
Hourly Total
1700 - 1715
1715 - 1730
1730 - 1745
1745 - 1800
Hourly Total
Grand Total
Approach %
Intersection %
PHF

	So	uthbou	nd			E	astboun	nd		W	estbou	nd		I
	Bi	lltown F	₹d			Sea	tonville	Rd		KY-1819	Seator	ville Rd		İ
Left		Right	U-Turn	App	Left	Thru		U-Turn	App	Thru	Right	U-Turn	App	Int
4.1		4.2	4.3	Total	4.4	4.5		4.6	Total	4.7	4.8	4.9	Total	Total
29		77	0	106	27	9		0	36	8	14	0	22	164
29		75	0	104	24	12		0	36	6	15	0	21	161
38		87	0	125	31	20		0	51	10	13	0	23	199
26		103	0	129	30	17		0	47	9	12	0	21	197
122		342	0	464	112	58		0	170	33	54	0	87	721
28		98	0	126	28	10		0	38	8	11	0	19	183
30		119	0	149	29	17		0	46	5	11	0	16	211
36		72	0	108	23	12		0	35	6	20	0	26	169
28		78	0	106	31	13		0	44	14	17	0	31	181
122		367	0	489	111	52		0	163	33	59	0	92	744
244		709	0	953	223	110		0	333	66	113	0	179	1465
25.60		74.40	0.00	-	66.97	33.03		0.00	-	36.87	63.13	0.00	-	
16.66		48.40	0.00	65.05	15.22	7.51		0.00	22.73	4.51	7.71	0.00	12.22	j
		-												
0.80		0.86	0.00	0.89	0.95	0.80		0.00	0.89	0.80	0.90	0.00	0.86	0.94
														i



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Site 3 of 4

Broad Run Rd

Broad Run, KY

Seatonville Rd (West) Seatonville Rd (East)

Date

Tuesday, April 13, 2021

Weather Cloudy 61°F

Lat/Long 38.137031°, -85.547568°

0700 - 0900 (Weekday 2h Session) (13-04-2021)

All vehicles

		No	orthbou	nd	
		Bro	oad Run	Rd	
	Left		Right	U-Turn	App
TIME	3.1		3.2	3.3	Total
0700 - 0715	7		11	0	18
0715 - 0730	12		12	0	24
0730 - 0745	9		11	0	20
0745 - 0800	16		9	0	25
Hourly Total	44		43	0	87
0800 - 0815	12		11	0	23
0815 - 0830	7		9	0	16
0830 - 0845	7		3	0	10
0845 - 0900	7		1	0	8
Hourly Total	33		24	0	57
Grand Total	77		67	0	144
Approach %	53.47		46.53	0.00	-
Intersection %	11.90		10.36	0.00	22.26
PHF	0.77		0.90	0.00	0.92

Ea	astboun	ıd			W	estboui	nd			
Seaton	ville Rd	(West)			Seatonville Rd (East)					
Thru	Right	U-Turn	App	Left	Thru		U-Turn	App	Int	
3.4	3.5	3.6	Total	3.7	3.8		3.9	Total	Total	
32	5	0	37	1	8		0	9	64	
38	3	0	41	2	14		0	16	81	
33	8	0	41	3	19		0	22	83	
60	4	0	64	5	20		0	25	114	
163	20	0	183	11	61		0	72	342	
53	2	0	55	3	18		0	21	99	
38	3	0	41	1	23		0	24	81	
31	2	0	33	4	20		0	24	67	
25	3	0	28	3	19		0	22	58	
147	10	0	157	11	80		0	91	305	
310	30	0	340	22	141		0	163	647	
91.18	8.82	0.00	-	13.50	86.50		0.00	-		
47.91	4.64	0.00	52.55	3.40	21.79		0.00	25.19		
0.77	0.53	0.00	0.79	0.65	0.89		0.00	0.84	0.83	

1600 - 1800 (Weekday 2h Session) (13-04-2021)

		No	orthbou	nd	
		Bro	oad Run	Rd	
	Left		Right	U-Turn	App
TIME	3.1		3.2	3.3	Total
1600 - 1615	6		6	0	12
1615 - 1630	7		7	0	14
1630 - 1645	5		5	0	10
1645 - 1700	5		3	0	8
Hourly Total	23		21	0	44
1700 - 1715	6		5	0	11
1715 - 1730	10		5	0	15
1730 - 1745	5		5	0	10
1745 - 1800	10		8	0	18
Hourly Total	31		23	0	54
Grand Total	54		44	0	98
Approach %	55.10		44.90	0.00	-
Intersection %	4.20		3.42	0.00	7.62
PHF	0.65		0.90	0.00	0.73

		nd	estboui	W			d	astboun	E
		(East)	nville Rd	Seato			(West)	ville Rd	Seaton
Int	App	U-Turn		Thru	Left	App	U-Turn	Right	Thru
Total	Total	3.9		3.8	3.7	Total	3.6	3.5	3.4
139	82	0		71	11	45	0	12	33
143	79	0		66	13	50	0	16	34
154	94	0		79	15	50	0	8	42
181	111	0		95	16	62	1	20	41
617	366	0		311	55	207	1	56	150
173	111	0		99	12	51	0	14	37
204	129	0		108	21	60	0	19	41
136	80	0		71	9	46	0	17	29
156	92	0		76	16	46	0	12	34
669	412	0		354	58	203	0	62	141
			•						
1286	778	0		665	113	410	1	118	291
	-	0.00		85.48	14.52	-	0.24	28.78	70.98
	60.50	0.00		51.71	8.79	31.88	0.08	9.18	22.63
			•						
0.87	0.86	0.00		0.88	0.76	0.90	0.25	0.76	0.96
	•		•						



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Site 2 of 4

Brentlinger Ln

Broad Run, KY

Seatonville Rd (North)

Seatonville Rd (East)

Date

Tuesday, April 13, 2021

Lat/Long 38.137123°, -85.547928°

Weather

Cloudy 61°F

0700 - 0900 (Weekday 2h Session) (13-04-2021)

All vehicles

	No	orthbou	nd	Southbound					
	Bre	entlinger	· Ln			Seaton	ville Rd	(North)	
	Thru	Right	U-Turn	App	Left	Thru		U-Turn	App
TIME	2.1	2.2	2.3	Total	2.4	2.5		2.6	Total
0700 - 0715	0	23	0	23	15	0		0	15
0715 - 0730	1	34	0	35	10	0		0	10
0730 - 0745	0	27	0	27	13	0		0	13
0745 - 0800	1	54	0	55	8	0		0	8
Hourly Total	2	138	0	140	46	0		0	46
0800 - 0815	1	45	0	46	10	2		0	12
0815 - 0830	0	31	0	31	10	2		0	12
0830 - 0845	1	22	0	23	10	0		0	10
0845 - 0900	1	13	0	14	15	0		0	15
Hourly Total	3	111	0	114	45	4		0	49
Grand Total	5	249	0	254	91	4		0	95
Approach %	1.97	98.03	0.00	-	95.79	4.21		0.00	-
Intersection %	0.88	43.92	0.00	44.80	16.05	0.71		0.00	16.75
PHF	0.50	0.73	0.00	0.72	0.79	0.50		0.00	0.87

	W	estbou	nd		
	Seator	nville Rd	(East)		
Left		Right	U-Turn	App	Int
2.7		2.8	2.9	Total	Total
5		9	0	14	52
8		19	0	27	72
13		14	0	27	67
13		24	0	37	100
39		66	0	105	291
15		15	0	30	88
17		13	0	30	73
17		10	0	27	60
15		11	0	26	55
64		49	0	113	276
103		115	0	218	567
47.25		52.75	0.00	-	
18.17		20.28	0.00	38.45	
0.85		0.69	0.00	0.84	0.82
		·			

1600 - 1800 (Weekday 2h Session) (13-04-2021)

	No	orthbou	nd			So	uthbou	nd	
	Bre	entlinger	· Ln			Seaton	ville Rd	(North)	
	Thru	Right	U-Turn	App	Left	Thru		U-Turn	App
TIME	2.1	2.2	2.3	Total	2.4	2.5		2.6	Total
1600 - 1615	1	21	0	22	24	2		0	26
1615 - 1630	1	15	0	16	35	3		0	38
1630 - 1645	2	15	0	17	35	1		0	36
1645 - 1700	1	21	0	22	42	14		0	56
Hourly Total	5	72	0	77	136	20		0	156
1700 - 1715	3	26	0	29	25	4		0	29
1715 - 1730	1	23	0	24	37	9		0	46
1730 - 1745	1	20	0	21	25	2		0	27
1745 - 1800	0	21	0	21	25	6		0	31
Hourly Total	5	90	0	95	112	21		0	133
Grand Total	10	162	0	172	248	41		0	289
Approach %	5.81	94.19	0.00	-	85.81	14.19		0.00	-
Intersection %	0.85	13.72	0.00	14.56	21.00	3.47		0.00	24.47
				-		-	_		
PHF	0.58	0.82	0.00	0.79	0.83	0.50		0.00	0.75

	W	estboui	nd		
	Seator	rville Rd	(East)		
Left		Right	U-Turn	App	Int
2.7		2.8	2.9	Total	Total
55		22	0	77	125
57		16	0	73	127
67		17	0	84	137
82		19	0	101	179
261		74	0	335	568
83		21	0	104	162
99		20	0	119	189
61		15	0	76	124
59		27	0	86	138
302		83	0	385	613
563		157	0	720	1181
78.19		21.81	0.00	-	
47.67		13.29	0.00	60.97	
0.84		0.92	0.00	0.86	0.88
			•		•



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Site 1 of 4
US-150 Bardstown Rd (South)
US-150 Bardstown Rd (North)

Cedar Creek Rd Brentlinger Ln

Broad Run, KY

Date
Tuesday, April 13, 2021

Weather Cloudy 61°F

Lat/Long

38.134100°, -85.579618°

79618°

0700 - 0900 (Weekday 2h Session) (13-04-2021)

All vehicles

		No	orthbou	nd			So	uthbou	nd			E	astboun	ıd			W	/estbou	nd		1
	US	-150 Bar	dstown	Rd (Sou	th)	US	-150 Bar	dstown	Rd (Nor	th)		Ced	lar Creel	k Rd			Bre	entlinger	· Ln		
	Left	Thru	Right	U-Turn	App	Left	Thru	Right	U-Turn	App	Left	Thru	Right	U-Turn	App	Left	Thru	Right	U-Turn	App	Int
TIME	1.1	1.2	1.3	1.4	Total	1.5	1.6	1.7	1.8	Total	1.9	1.10	1.11	1.12	Total	1.13	1.14	1.15	1.16	Total	Total
0700 - 0715	0	538	13	0	551	12	177	11	0	200	26	3	7	0	36	3	0	33	0	36	823
0715 - 0730	4	582	15	0	601	13	239	22	0	274	28	2	3	0	33	4	3	44	0	51	959
0730 - 0745	1	527	14	0	542	21	250	16	0	287	43	6	3	0	52	10	4	38	0	52	933
0745 - 0800	1	528	15	0	544	29	299	14	0	342	24	2	9	0	35	7	0	44	0	51	972
Hourly Total	6	2175	57	0	2238	75	965	63	0	1103	121	13	22	0	156	24	7	159	0	190	3687
0800 - 0815	2	539	20	0	561	24	253	9	0	286	16	1	4	0	21	18	1	33	0	52	920
0815 - 0830	4	511	16	0	531	15	249	24	0	288	13	4	2	0	19	8	0	33	0	41	879
0830 - 0845	2	460	18	0	480	30	244	5	0	279	20	7	2	0	29	15	5	52	0	72	860
0845 - 0900	1	409	23	0	433	43	225	7	0	275	21	4	6	0	31	21	8	48	0	77	816
Hourly Total	9	1919	77	0	2005	112	971	45	0	1128	70	16	14	0	100	62	14	166	0	242	3475
Grand Total	15	4094	134	0	4243	187	1936	108	0	2231	191	29	36	0	256	86	21	325	0	432	7162
Approach %	0.35	96.49	3.16	0.00	-	8.38	86.78	4.84	0.00	-	74.61	11.33	14.06	0.00	-	19.91	4.86	75.23	0.00	-	
Intersection %	0.21	57.16	1.87	0.00	59.24	2.61	27.03	1.51	0.00	31.15	2.67	0.40	0.50	0.00	3.57	1.20	0.29	4.54	0.00	6.03	
PHF	0.50	0.93	0.80	0.00	0.94	0.75	0.87	0.69	0.00	0.87	0.65	0.46	0.53	0.00	0.68	0.54	0.50	0.90	0.00	0.99	0.97

1600 - 1800 (Weekday 2h Session) (13-04-2021)

		No	rthbou	nd			So	uthbou	nd			E	astboun	ıd			W	/estboui	nd		
	US	-150 Bar	dstown	Rd (Sou	th)	US	-150 Bar	dstown	Rd (Nor	th)		Ced	lar Creel	k Rd			Bre	entlinger	Ln		
	Left	Thru	Right	U-Turn	App	Left	Thru	Right	U-Turn	App	Left	Thru	Right	U-Turn	App	Left	Thru	Right	U-Turn	App	Int
TIME	1.1	1.2	1.3	1.4	Total	1.5	1.6	1.7	1.8	Total	1.9	1.10	1.11	1.12	Total	1.13	1.14	1.15	1.16	Total	Total
1600 - 1615	4	344	15	0	363	40	547	18	0	605	12	4	9	0	25	55	15	44	0	114	1107
1615 - 1630	7	392	10	0	409	49	570	14	0	633	13	4	8	0	25	52	5	37	0	94	1161
1630 - 1645	9	420	13	0	442	29	554	17	0	600	14	1	5	0	20	48	7	36	0	91	1153
1645 - 1700	2	422	12	0	436	28	530	16	0	574	19	4	10	0	33	55	6	35	0	96	1139
Hourly Total	22	1578	50	0	1650	146	2201	65	0	2412	58	13	32	0	103	210	33	152	0	395	4560
1700 - 1715	5	415	20	0	440	40	549	20	0	609	18	5	11	0	34	73	9	28	0	110	1193
1715 - 1730	4	393	23	0	420	38	545	30	0	613	18	7	8	0	33	58	8	44	0	110	1176
1730 - 1745	10	421	8	0	439	44	550	17	0	611	19	4	8	0	31	46	11	31	0	88	1169
1745 - 1800	6	352	12	0	370	48	535	13	0	596	15	1	5	0	21	42	10	39	0	91	1078
Hourly Total	25	1581	63	0	1669	170	2179	80	0	2429	70	17	32	0	119	219	38	142	0	399	4616
Grand Total	47	3159	113	0	3319	316	4380	145	0	4841	128	30	64	0	222	429	71	294	0	794	9176
Approach %	1.42	95.18	3.40	0.00	-	6.53	90.48	3.00	0.00	-	57.66	13.51	28.83	0.00	-	54.03	8.94	37.03	0.00	-	
Intersection %	0.51	34.43	1.23	0.00	36.17	3.44	47.73	1.58	0.00	52.76	1.39	0.33	0.70	0.00	2.42	4.68	0.77	3.20	0.00	8.65	
				-			-					-		-			-	-			
PHF	0.53	0.98	0.68	0.00	0.99	0.85	0.99	0.69	0.00	0.98	0.97	0.71	0.84	0.00	0.96	0.79	0.77	0.78	0.00	0.92	0.98
			-					-		-					-						

HCS Reports

Movement							J IVC	0113									
Agency Co. Agency Co.			Н	CS7	Two-	-Way	Sto _l	o-Co	ntrol	Rep	ort						
Agency Co. Date Partner Control Engrecy Co. Control Contro	General Information	_			_			Site	Inform	natio	n	_		_			
Agency/Co. Date Performed Osigne		DBZ										Seato	nville at	Billtown	n		
Part		_	B Zimm	nerman 1	raffic En	aineerin	a								-		
Analyzed		_								eet		Seato	onville Re	oad			
Analysis Intersection Orientation Seath-West Seat	Analysis Year	2021						North	n/South :	Street		Billto	wn Road	i			
Project Description Broad Radjustration Project Description	Time Analyzed	AM F	eak					Peak	Hour Fac	ctor		0.88					
Vehicle Volumes and Adjustments	Intersection Orientation	East-	West					Analy	sis Time	Period (hrs)	0.25					
Vehicle Volumes and Adjustments	Project Description	Broad	d Run														
Vehicle Volumes and Adjustments Vehicle Volume	Lanes																
Movement					→ *	ካ ተ Maj	or Street: Ea	t t r	₽ L U								
Movement U L T R U L T	Vehicle Volumes and Ad	justme	nts														
Priority 1U 1 2 3 4U 4 5 6 7 8 9 10 11 1 1 1 1 1 1 1	Approach		Eastb	ound			West	bound			North	bound			South	bound	_
Number of Lanes 0 0 0 1 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0	Movement	_	_		_			_	_	U	_		-	U	-	-	R
Configuration		-	_			_		_	_		_	_	-	_		_	12
Volume (veh/h) 204 19 29 105 40 6 6 6 6 6 6 6 6 6		0		1	0	0	0	1	-		0	0	0	-	0	-	C
Percent Heavy Vehicles (%) 2		+-	_	40				20	_					-	40	LR	
Percent Grade (%) Right Turn Channelized Median Type Storage Undivided Critical and Follow-up Headways Base Critical Headway (sec) 4.1		+	-	19				29	105					-	_	-	8
Right Turn Channelized Median Type Storage Undivided		+	2												8		l c
Right Turn Channelized Median Type Storage Undivided Critical and Follow-up Headways Base Critical Headway (sec) 4.1 7.1 6 Critical Headway (sec) 4.12 6.48 6. Base Follow-Up Headway (sec) 2.2 3.57 3. Follow-Up Headway (sec) Delay, Queue Length, and Level of Service Flow Rate, v (veh/h) 232 119 Capacity, c (veh/h) 1428 615 v/c Ratio 0.16 0.19 595% Queue Length, Q ₈₈ (veh) 0.6 0.7 Control Delay (s/veh) 8.0 12.3 Level of Service (LOS) A	<u> </u>	+												-			
Median Type Storage Undivided Critical and Follow-up Headways Base Critical Headway (sec) 4.1 7.1 6 Critical Headway (sec) 4.12 6.48 6 Base Follow-Up Headway (sec) 2.2 3.5 3 Follow-Up Headway (sec) 2.22 3.57 3 Delay, Queue Length, and Level of Service Flow Rate, v (veh/h) 232 119 119 Capacity, c (veh/h) 1428 615 0.19 95% Queue Length, Q ₉₅ (veh) 0.6 0.7 0.7 Control Delay (s/veh) 8.0 12.3 12.3 Level of Service (LOS) A 8 8 8	<u>``</u>	+															
Critical and Follow-up Headways Base Critical Headway (sec) 4.1 7.1 6 Critical Headway (sec) 4.12 6.48 6 Base Follow-Up Headway (sec) 2.2 3.5 3 Follow-Up Headway (sec) 2.22 3.57 3 Delay, Queue Length, and Level of Service Flow Rate, v (veh/h) 232 119 119 Capacity, c (veh/h) 1428 615 17 V/c Ratio 0.16 0.19 0.19 95% Queue Length, Q ₉₅ (veh) 0.6 0.7 0.7 Control Delay (s/veh) 8.0 12.3 12.3 Level of Service (LOS) A 8 8 8		+			Undi	vided											
Base Critical Headway (sec) 4.1		eadwa	ys														
Critical Headway (sec) 4.12 6.48 6. Base Follow-Up Headway (sec) 2.2 3.5 3 Follow-Up Headway (sec) 2.22 3.57 3.57 Delay, Queue Length, and Level of Service Flow Rate, v (veh/h) 232 119 Capacity, c (veh/h) 1428 615 v/c Ratio 0.16 0.19 95% Queue Length, Q ₉₅ (veh) 0.6 0.7 Control Delay (s/veh) 8.0 12.3 Level of Service (LOS) A 8 8		Т	1	П		Г	П	П	П	Г			П	Т	7.1		6.
Sase Follow-Up Headway (sec) 2.2 3.5 3 3 3 5 5 3 3 5 5			_												_		6.2
Delay, Queue Length, and Level of Service Flow Rate, v (veh/h) 232 119 Capacity, c (veh/h) 1428 615 v/c Ratio 0.16 0.19 95% Queue Length, Q ₉₅ (veh) 0.6 0.7 Control Delay (s/veh) 8.0 12.3 Level of Service (LOS) A 8	Base Follow-Up Headway (sec)		2.2												3.5		3.
Flow Rate, v (veh/h) 232 119 Capacity, c (veh/h) 1428 615 v/c Ratio 0.16 0.19 95% Queue Length, Qos (veh) 0.6 0.7 Control Delay (s/veh) 8.0 12.3 Level of Service (LOS) A B	Follow-Up Headway (sec)		2.22												3.57		3.3
Capacity, c (veh/h) 1428 615 v/c Ratio 0.16 0.19 95% Queue Length, Q ₉₅ (veh) 0.6 0.7 Control Delay (s/veh) 8.0 12.3 Level of Service (LOS) A B	Delay, Queue Length, an	d Leve	l of S	ervice													
v/c Ratio 0.16 0.19 95% Queue Length, Q ₉₅ (veh) 0.6 0.7 Control Delay (s/veh) 8.0 12.3 Level of Service (LOS) A B		T	_													119	
95% Queue Length, Q ₉₅ (veh) 0.6 0.7 Control Delay (s/veh) 8.0 12.3 Level of Service (LOS) A B			1428													615	
Control Delay (s/veh) 8.0 12.3 Level of Service (LOS) A B	v/c Ratio		0.16													0.19	
Level of Service (LOS) A B	95% Queue Length, Q ₉₅ (veh)		0.6													0.7	
	Control Delay (s/veh)		8.0													12.3	
Approach Delay (s/veh) 7.4 12.3	Level of Service (LOS)		А													В	
	Approach Delay (s/veh)		7	.4											1.	2.3	
			_														

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HCSTM TWSC Version 7.9.5 Billtown AM 21.xtw Generated: 8/5/2021 5:48:59 PM

		Н	CS7	Two-	-Way	Stop	o-Co	ntrol	Rep	ort						
General Information							Site	Inforr	natio	n						_
Analyst	DBZ						Inters	ection			Seato	nville at	Billtown			
Agency/Co.	_	B Zimm	erman 1	raffic En	gineerin	a	_	liction								
Date Performed	8/5/2				J		_	West Stre	eet		Seato	nville Ro	ad			
Analysis Year	2028							/South :			Billto	wn Road				
Time Analyzed	_	eak No E	Build				_	Hour Fac			0.88					
Intersection Orientation	East-\						_	sis Time		hrs)	0.25					
Project Description	Broad						7 11101)	515 111110	· criou (,	0.25					
Lanes	Brode	- rtuii														
				A 7 4 4 7 ↑ 7 C	\ \ \	*Y1	N & C	74 14 44 4 7 10								
Vehicle Volumes and Adj	justme	nts				or Street: Ea	st-West									
Approach		Eastb	ound			Westl	oound			North	bound			South	bound	
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	F
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	1.
	0	0	1	0	0	0	1	0		0	0	0		0	1	С
Number of Lanes															LR	
Number of Lanes Configuration		LT						TR							LIN	
		LT 219	20				31	113						43	LK	70
Configuration			20				31							43	LK	\vdash
Configuration Volume (veh/h)		219	20				31							_	LK	\vdash
Configuration Volume (veh/h) Percent Heavy Vehicles (%)		219	20				31							8	0	\vdash
Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked		219	20				31							8		\vdash
Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%)		219	20	Undi	vided		31							8		\vdash
Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized	eadwa	219	20	Undi	vided		31							8		\vdash
Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage	eadwa	219	20	Undi	vided		31							8		8
Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up H	eadwa	219 2 ys	20	Undi	vided		31							8		6.
Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up H Base Critical Headway (sec)	eadwa	219 2 ys 4.1	20	Undi	vided		31							7.1		6.2
Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec)	eadwa	219 2 ys 4.1 4.12	20	Undi	vided		31							7.1		6. 6.2 3.
Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec)		219 2 ys 4.1 4.12 2.2 2.22			vided		31							7.1 6.48 3.5		6. 6.2 3.
Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec)		219 2 ys 4.1 4.12 2.2 2.22			vided		31							7.1 6.48 3.5		6. 6.2 3.
Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, an		219 2 ys 4.1 4.12 2.2 2.22 I of Se			vided		31							7.1 6.48 3.5	0	6. 6.2 3.
Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, an Flow Rate, v (veh/h)		219 2 ys 4.1 4.12 2.2 2.22 I of Se			vided		31							7.1 6.48 3.5	128	6. 6.2 3.
Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, an Flow Rate, v (veh/h) Capacity, c (veh/h)		219 2 ys 4.1 4.12 2.2 2.22 I of Se 249 1415			vided		31							7.1 6.48 3.5	128	6. 6.2 3.
Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, an Flow Rate, v (veh/h) Capacity, c (veh/h) v/c Ratio		219 2 ys 4.1 4.12 2.2 2.22 1 of Se 249 1415 0.18			vided		31							7.1 6.48 3.5	128 586 0.22	6. 6.2 3.
Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, an Flow Rate, v (veh/h) Capacity, c (veh/h) v/c Ratio 95% Queue Length, Q ₉₅ (veh)		219 2 ys 4.1 4.12 2.2 2.22 1 of Se 249 1415 0.18 0.6			vided		31							7.1 6.48 3.5	128 586 0.22 0.8	6 6.2 3 3.3
Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, an Flow Rate, v (veh/h) Capacity, c (veh/h) v/c Ratio 95% Queue Length, Q ₉₅ (veh) Control Delay (s/veh)		219 2 ys 4.1 4.12 2.2 2.22 l of Se 249 1415 0.18 0.6 8.1 A			vided		31							7.1 6.48 3.5 3.57	128 586 0.22 0.8 12.9	6. 6.2 3.

		Н	ICS7	Two-	-Way	Stop	o-Co	ntrol	Rep	ort						
General Information	_						Site	Inforr	natio	n						
Analyst	DBZ						Inters	ection			Seato	nville at	Billtowr	n		
Agency/Co.	Diane	B Zimn	nerman [*]	Traffic En	gineerin	q		liction								
Date Performed	3/10/						-	West Stre	eet		Seato	nville Ro	ad			
Analysis Year	2028						_	n/South S			Billto	wn Road				
Time Analyzed	-	eak Build	d				_	Hour Fac			0.88					
Intersection Orientation	East-		-					sis Time		hrs)	0.25					
Project Description	Broad	d Run														
Lanes																
				A 7 4 4 Y ↑ 7 C	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	* Y 1	↑ ↑ ↑ st-West	174471								
Vehicle Volumes and Adj	ustme	nts														
Approach	_	_	oound				bound				bound			_	bound	
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	10	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	1	0
Configuration	_	LT						TR							LR	╙
Volume (veh/h)	_	331	20				31	113						43		108
Percent Heavy Vehicles (%)	_	2	_								_			8		8
Proportion Time Blocked	_															
Percent Grade (%)	_														0	
Right Turn Channelized																
Median Type Storage				Undi	vided											_
Critical and Follow-up He	eadwa	ys														
Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.12												6.48		6.2
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.22												3.57		3.3
Delay, Queue Length, and	d Leve	_	ervice													
Flow Rate, v (veh/h)	_	376	_								_				172	L
Capacity, c (veh/h)		1415													498	
v/c Ratio		0.27													0.34	
95% Queue Length, Q ₉₅ (veh)		1.1													1.5	
Control Delay (s/veh)		8.5													16.0	_
Level of Service (LOS)		A													С	
Approach Delay (s/veh)		8	3.1												5.0 C	
Approach LOS																

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		Н	CS7	Two-	-Way	Stop	o-Co	ntrol	Rep	ort						
General Information	_						Site	Inforr	natio	n				_		_
Analyst	DBZ						Inters	ection			Seato	onville at	Billtowr	n		
Agency/Co.	Diane	e B Zimn	nerman 1	Fraffic En	gineerin	g	Jurisc	liction								
Date Performed	8/5/2						East/	West Stre	eet		Seato	onville Ro	ad			
Analysis Year	2021							n/South :			Billto	wn Road				
Time Analyzed	PM P	eak						Hour Fac			0.94					
Intersection Orientation	East-							sis Time		hrs)	0.25					
Project Description	-	d Run									0					_
Lanes																
				A 7 4 4 7 ↑ 7 7		・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・		14 14 4 4 10								
Vehicle Volumes and Adj	ustme	nts			iviaji	or street, ca	st-west									
Approach	_	_	ound				bound				bound			_	bound	_
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	F
Priority	10	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	1	0
Configuration	_	LT						TR			_			<u> </u>	LR	╙
Volume (veh/h)	_	118	64				32	47						122		40
Percent Heavy Vehicles (%)		6												2		
Proportion Time Blocked																L
Percent Grade (%)															0	
Right Turn Channelized																
Median Type Storage				Undi	vided											
Critical and Follow-up He	eadwa	ys														
Base Critical Headway (sec)	Π	4.1												7.1		6.
Critical Headway (sec)		4.16												6.42		6.2
Base Follow-Up Headway (sec)		2.2												3.5		3.
Follow-Up Headway (sec)		2.25												3.52		3.3
Delay, Queue Length, and	d Leve	l of S	ervice													
Flow Rate, v (veh/h)	$\overline{}$	126												$\overline{}$	563	Т
Capacity, c (veh/h)		1488													857	
v/c Ratio		0.08													0.66	
95% Queue Length, Q ₉₅ (veh)		0.3													5.1	
		7.6													16.9	
Control Delay (s/veh)					_		_	_			_	_		-	_	-
		А													C	
Control Delay (s/veh)			.2											16	C 5.9	

Billtown PM 21.xtw

			C37	1000	vvay	310	5- C0	ntrol	veh	Ort						
General Information							Site	Inforr	natio	n						
Analyst	DBZ						Inters	ection			Seato	onville at	Billtowr	n		
Agency/Co.	Diane	e B Zimn	nerman 1	raffic En	gineerin	g	Juriso	liction								
Date Performed	8/5/2	2021					East/	West Stre	eet		Seato	onville Ro	oad			
Analysis Year	2028						North	n/South S	Street		Billto	wn Road	ı			
Time Analyzed	PM P	eak No E	Build				Peak	Hour Fac	tor		0.94					
Intersection Orientation	East-	West					Analy	sis Time	Period (hrs)	0.25					
Project Description	Broad	d Run														
Lanes																
				9744√ 9744√		ক শুশ pr Street: Ea		₽ □ ₩								
Vehicle Volumes and Adj	ustme															
Approach	 	_	ound			_	bound				bound	T 5		_	bound	
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U 0	1	2	3	4U 0	0	5	6		7	8	9		10	11	12
Number of Lanes	+ 0	0 LT	1	0	0	U	1	TR		U	0	0		0	1 LR	┵
Configuration	\vdash	127	69				34	50						131	LK	43
Volume (veh/h) Percent Heavy Vehicles (%)	+-	6	09				34	30						2		1
Proportion Time Blocked	\vdash	0														 '
Percent Grade (%)	+-														<u> </u>	
Right Turn Channelized																
Median Type Storage	_			Undi	vided											
Critical and Follow-up H	eadwa	γs														
Base Critical Headway (sec)	$\overline{}$	4.1												7.1		6.2
Critical Headway (sec)		4.16												6.42		6.2
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.25												3.52		3.3
Delay, Queue Length, an	d Leve	l of S	ervice													
Flow Rate, v (veh/h)	Т	135													603	Π
Capacity, c (veh/h)		1481													840	
		0.09													0.72	
v/c Ratio		0.3													6.3	
v/c Ratio 95% Queue Length, Q ₉₅ (veh)				-												
·		7.7													19.4	
95% Queue Length, Q ₉₅ (veh)		7.7 A													19.4 C	

Billtown PM 28 NB.xtw

					-Way											
General Information							Site	Inforr	natio	n						
Analyst	DBZ						Inters	ection			Seato	nville at	Billtowr	ı		
Agency/Co.	Diane	B Zimm	nerman ⁻	Fraffic En	gineerin	g	Jurisd	liction								
Date Performed	3/10/	2022					East/\	West Stre	eet		Seato	nville Ro	oad			
Analysis Year	2028						North	n/South S	Street		Billto	wn Road	l			
Time Analyzed	PM P	eakBuild					Peak	Hour Fac	tor		0.94					
Intersection Orientation	East-	West					Analy	sis Time	Period (hrs)	0.25					
Project Description	Broad	l Run														
Lanes																
				974 4 √ + 7	n n	The street: Ea	T to the state of the state o	7								
Vehicle Volumes and Adj	ustme	nts														
Approach	_		ound			_	oound				bound			_	bound	
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	F
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	13
	1 .															
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	1	(
Number of Lanes Configuration	0	LT		0	0	0		TR		0	0	0			1 LR	
Number of Lanes Configuration Volume (veh/h)	0	LT 201	69	0	0	0	34			0	0	0		131	_	56
Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%)	0	LT		0	0	0		TR		0	0	0			_	56
Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked	0	LT 201			0	0		TR		0	0	0		131	LR	56
Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%)	0	LT 201			0	0		TR		0	0	0		131	_	56
Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized	0	LT 201				0		TR		0	0	0		131	LR	56
Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage		LT 201 6			vided	0		TR		0	0	0		131	LR	56
Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up He		LT 201 6				0		TR		0	0	0		131 2	LR	56
Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up Heads (Sec)		LT 201 6				0		TR		0	0	0		7.1	LR	56
Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up Ho Base Critical Headway (sec)		LT 201 6				0		TR		0	0			7.1 6.42	LR	6. 6.2
Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up Ho Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec)		ys 4.1 4.16 2.2				0		TR		0	0			7.1 6.42 3.5	LR	6.3
Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up He Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec)	eadwa	ys 4.1 4.16 2.2 2.25	69	Undi		0		TR		0	0			7.1 6.42	LR	6 6.3
Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up Ho Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, and	eadwa	ys 4.1 4.16 2.2 2.25 I of Se	69	Undi		0		TR		0	0			7.1 6.42 3.5	LR	6 6.3
Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up Ho Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, and Flow Rate, v (veh/h)	eadwa	ys 4.1 4.16 2.2 2.25 I of So 214	69	Undi		0		TR		0	0			7.1 6.42 3.5	LR 00 0 736	6 6.3
Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up Ho Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Pollow-Up Headway (sec) Delay, Queue Length, and Flow Rate, v (veh/h) Capacity, c (veh/h)	eadwa	ys 4.1 4.16 2.2 2.25 I of Se 214 1481	69	Undi				TR						7.1 6.42 3.5	736 791	6.
Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up Ho Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, and Flow Rate, v (veh/h) Capacity, c (veh/h) v/c Ratio	eadwa	ys 4.1 4.16 2.2 2.25 I of Se 214 1481 0.14	69	Undi				TR						7.1 6.42 3.5	736 791 0.93	6 6.3
Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up Ho Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, and Flow Rate, v (veh/h) Capacity, c (veh/h) v/c Ratio 95% Queue Length, Q ₉₅ (veh)	eadwa	ys 4.1 4.16 2.2 2.25 I of So 214 1481 0.14 0.5	69	Undi				TR						7.1 6.42 3.5	736 791 0.93 13.5	6 6.3
Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up Ho Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, and Flow Rate, v (veh/h) Capacity, c (veh/h) v/c Ratio 95% Queue Length, Q ₉₅ (veh) Control Delay (s/veh)	eadwa	ys 4.1 4.16 2.2 2.25 I of Se 214 1481 0.14 0.5 7.8	69	Undi				TR						7.1 6.42 3.5	736 791 0.93 13.5 40.4	6 6.3
Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up Ho Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, and Flow Rate, v (veh/h) Capacity, c (veh/h) v/c Ratio 95% Queue Length, Q ₉₅ (veh)	eadwa	ys 4.1 4.16 2.2 2.25 I of Se 214 1481 0.14 0.5 7.8 A	69	Undi				TR						7.1 6.42 3.5 3.52	736 791 0.93 13.5	6 6. 3

Billtown PM 28 B.xtw

		Н	ICS7	Two-	-Way	Stop	o-Co	ntrol	Rep	ort						
General Information	_						Site	Inforr	natio	n						_
Analyst	DBZ						Inters	ection			Seato	nville at	Broad R	Run		_
Agency/Co.	-	B Zimn	nerman 1	Fraffic En	aineerin	a	Jurisd				- Seatt					
Date Performed	6/23/				J			Nest Stre	eet		Seato	nville Ro	ad			_
Analysis Year	2021						_	/South S			Broad	l Run				
Time Analyzed	AM P	eak						Hour Fac			0.83					_
Intersection Orientation	East-						_	sis Time		hrs)	0.25					
Project Description	Broad									,						_
Lanes																
				974	The Maj	ヤ ヤ ヤ or Street: Ea	F C	* * * * * C G								
Vehicle Volumes and Adj	ustme	nts														
Approach	_		oound			Westl					bound			_	bound	
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	Т	L
	1 1U	1	2	3	4U	4	5	6		7	8	9	l	10	11	1
Priority	+		$\overline{}$													-
Number of Lanes	0	0	1	0	0	0	1	0		0	1	0		0	0	
Number of Lanes Configuration	0	0		TR	0	LT		0			1 LR			0	0	
Number of Lanes Configuration Volume (veh/h)	0	0	184	-	0	LT 13	71	0		49	_	43		0	0	
Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%)	0	0		TR	0	LT		0			_			0	0	
Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked	0	0		TR	0	LT 13		0		49	LR	43		0	0	
Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%)	0	0		TR	0	LT 13		0		49	_	43		0	0	
Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized	0	0		TR 17		LT 13		0		49	LR	43		0	0	
Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage				TR 17	0 vided	LT 13		0		49	LR	43		0	0	
Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized				TR 17		LT 13		0		49	LR	43		0	0	
Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up He Base Critical Headway (sec)				TR 17		LT 13 38 4.1		0		49 4	LR	43 2		0	0	
Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up He Base Critical Headway (sec) Critical Headway (sec)				TR 17		LT 13 38 4.1 4.48		0		7.1	LR	6.2		0	0	
Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up House Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec)				TR 17		LT 13 38 4.1 4.1 4.48 2.2		0		7.1 6.44 3.5	LR	6.2 6.2 3.3		0	0	
Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec)	eadwa	ys	184	TR 17 Undi		LT 13 38 4.1 4.48		0		7.1	LR	6.2		0	0	
Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up House Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, and	eadwa	ys	184	TR 17 Undi		LT 13 38 4.1 4.48 2.2 2.54		0		7.1 6.44 3.5	LR	6.2 6.2 3.3		0	0	
Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, an Flow Rate, v (veh/h)	eadwa	ys	184	TR 17 Undi		LT 13 38 4.1 4.1 4.48 2.2 2.54		0		7.1 6.44 3.5	LR 00 1111	6.2 6.2 3.3		0	0	
Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Pelay, Queue Length, and Flow Rate, v (veh/h) Capacity, c (veh/h)	eadwa	ys	184	TR 17 Undi		LT 13 38 4.1 4.4 2.2 2.54 16 1140		0		7.1 6.44 3.5	LR 00 0 1111 111 705	6.2 6.2 3.3		0	0	
Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up Hease Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, an Flow Rate, v (veh/h) Capacity, c (veh/h) v/c Ratio	eadwa	ys	184	TR 17 Undi		LT 13 38 4.1 4.48 2.2 2.54 16 1140 0.01		0		7.1 6.44 3.5	LR 00 00 00 00 00 00 00 00 00 00 00 00 00	6.2 6.2 3.3		0	0	
Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up Hollow-up Hol	eadwa	ys	184	TR 17 Undi		LT 13 38 4.1 4.48 2.2 2.54 16 1140 0.01 0.0				7.1 6.44 3.5	111 705 0.16	6.2 6.2 3.3		0	0	
Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, an Flow Rate, v (veh/h) V/c Ratio 95% Queue Length, Q ₉₅ (veh) Control Delay (s/veh)	eadwa	ys	184	TR 17 Undi		LT 13 38 4.1 4.48 2.2 2.54 16 1140 0.01 0.0 8.2				7.1 6.44 3.5	111 705 0.16 11.1	6.2 6.2 3.3			0	
Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up Hollow-up Hol	eadwa	ys	184	TR 17 Undi		LT 13 38 4.1 4.4 4.48 2.2 2.54 16 1140 0.01 0.0 8.2 A				7.1 6.44 3.5 3.54	111 705 0.16	6.2 6.2 3.3			0	

		H	ICS7	Two-	-Way	Stop	o-Co	ntrol	Rep	ort						
General Information			_		_		Site	Inforr	natio	1		_		_		_
Analyst	DBZ						Inters	ection			Seato	nville at	Broad F	Run		
Agency/Co.	Diane	B Zimn	nerman 1	raffic En	gineerin	g	Jurisd	liction								
Date Performed	6/23/						East/\	Nest Stre	eet		Seato	nville Ro	ad			
Analysis Year	2028							/South S			Broad	l Run				
Time Analyzed	AM P	eak					_	Hour Fac			0.83					_
Intersection Orientation	East-\	Nest						sis Time		hrs)	0.25					
Project Description	Broad	l Run														_
Lanes																
				A 7 4 4 7 ↑ 7 C		Y 1	t -West	4 1 4 4 4 4 6 10								
Vehicle Volumes and Ad	justme	nts			-											
Approach	\perp	Eastl	oound			Westl	oound			North	bound			South	bound	_
Movement	U	L	T	R	U	L	T	R	U	L	Т	R	U	L	Т	
Priority	10	1	2	3	4U	4	5	6		7	8	9		10	11	1
Number of Lanes	0	0	1	0	0	0	1	0		0	1	0		0	0	'
Configuration	\perp			TR		LT					LR					L
Volume (veh/h)			197	18		14	76			53		46				L
						38				4		2				L
Percent Heavy Vehicles (%)	_															L
Percent Heavy Vehicles (%) Proportion Time Blocked					_											
										-	0					
Proportion Time Blocked										(0					
Proportion Time Blocked Percent Grade (%)				Undi	vided					(0					
Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage	leadwa	ys		Undi	vided						0					
Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage	leadwa	ys		Undi	vided	4.1				7.1	0	6.2				
Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up H	leadwa	ys		Undi	vided	4.1					0	6.2				
Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up H Base Critical Headway (sec)	leadwa	ys		Undi	vided	_				7.1	0					
Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec)	leadwa	ys		Undi	vided	4.48				7.1 6.44	0	6.22				
Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec)			ervice		vided	4.48 2.2				7.1 6.44 3.5	0	6.22 3.3				
Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec)			ervice		vided	4.48 2.2				7.1 6.44 3.5	119	6.22 3.3				
Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, ar			ervice		vided	4.48 2.2 2.54				7.1 6.44 3.5		6.22 3.3				
Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, ar Flow Rate, v (veh/h)			ervice		vided	4.48 2.2 2.54				7.1 6.44 3.5	119	6.22 3.3				
Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, ar Flow Rate, v (veh/h) Capacity, c (veh/h)			ervice		vided	4.48 2.2 2.54 17 1123				7.1 6.44 3.5	119	6.22 3.3				
Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, ar Flow Rate, v (veh/h) Capacity, c (veh/h) v/c Ratio			ervice		vided	4.48 2.2 2.54 17 1123 0.02				7.1 6.44 3.5	119 685 0.17	6.22 3.3				
Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, ar Flow Rate, v (veh/h) Capacity, c (veh/h) v/c Ratio 95% Queue Length, Q95 (veh)			ervice		vided	4.48 2.2 2.54 17 1123 0.02 0.0				7.1 6.44 3.5	119 685 0.17 0.6	6.22 3.3				
Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, ar Flow Rate, v (veh/h) V/c Ratio 95% Queue Length, Q ₉₅ (veh) Control Delay (s/veh)			ervice		vided	17 1123 0.02 0.0 8.3 A	.4			7.1 6.44 3.5 3.54	119 685 0.17 0.6 11.4	6.22 3.3				

		Н	ICS7	Two-	-Way	Stop	o-Co	ntrol	Rep	ort						
General Information	_						Site	Inforn	natio	n						_
Analyst	DBZ						Inters	ection			Seato	nville at	Broad F	Run		
Agency/Co.	+	e B Zimn	nerman 1	Fraffic En	aineerin	a	Jurisd									
Date Performed	3/10/							Nest Stre	eet		Seato	nville Ro	ad			
Analysis Year	2028						_	/South S			Broad	l Run				
Time Analyzed	_	eak Buil	d					Hour Fac			0.83					_
Intersection Orientation	East-							sis Time		hrs)	0.25					
Project Description	+	d Run					7 111013	515 111110	Terrou (0.25					
Lanes	3.00.															
				0 7 4	To the Mai	↑↑↑↑↑↑	t-West	4 + 4 + 4 6								
Vehicle Volumes and Adj	ustme	nts														
Approach		Eastl	oound			Westl				North	bound			South	bound	_
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	Т	╄
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	
Number of Lanes	0	0	1	0	0	1	1	0		0	1	0		0	0	╄
Configuration	_			TR		L	T				LR					╄
Volume (veh/h)	_		197	43		52	76			127		158				╄
Percent Heavy Vehicles (%)						7				4		2		_		上
Proportion Time Blocked	_															<u>L</u>
Percent Grade (%)											0					
Right Turn Channelized	_															
Median Type Storage				Left	Only								1			
Critical and Follow-up H	eadwa	ys														
Base Critical Headway (sec)						4.1				7.1		6.2				Π
Critical Headway (sec)						4.17				6.44		6.22				T
Base Follow-Up Headway (sec)						2.2				3.5		3.3				T
Follow-Up Headway (sec)						2.26				3.54		3.32				T
Delay, Queue Length, an	d Leve	l of S	ervice													
Flow Rate, v (veh/h)						63					343					Γ
Capacity, c (veh/h)						1245					679					
v/c Ratio						0.05					0.51					
						0.2					2.9					
95% Queue Length, Q ₉₅ (veh)						8.0					15.6					
95% Queue Length, Q ₉₅ (veh) Control Delay (s/veh)																
						А					С					
Control Delay (s/veh)							.3			15	C 5.6					

Broad Run AM 28 B.xtw

		Н	ICS7	Two-	-Way	Stop	o-Co	ntrol	Rep	ort						
General Information	_						Site	Inforr	natio	n						_
Analyst	DBZ						Inters	ection			Seato	nville at	Broad F	Run		
Agency/Co.	Diane	B Zimn	nerman 1	raffic En	gineerin	a		liction								
Date Performed	6/23/						East/\	Nest Stre	eet		Seato	nville Ro	ad			
Analysis Year	2021						North	/South S	Street		Broad	l Run				
Time Analyzed	PM P	eak					Peak	Hour Fac	tor		0.87					_
Intersection Orientation	East-	West					Analy	sis Time	Period (hrs)	0.25					
Project Description	Broad	l Run														_
Lanes																
				2744777	T T Majo	Tor Street: Ea	↑ ↑	A 1 4 4 7 1								
Vehicle Volumes and Adj	ustme															
Approach	-		oound	_			oound	_			bound	_		_	bound	_
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	L
Priority	10	1	2	3	4U	4	5	6		7	8	9		10	11	-
Number of Lanes	1U 0	0	1	0	0	0	1	0		0	1	0		0	0	-
Number of Lanes Configuration	+		1	0 TR	_	0 LT	1	_		0	_	0		-	-	1
Number of Lanes Configuration Volume (veh/h)	+		-	0	_	0 LT 64	_	_		0 26	1	0 18		-	-	-
Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%)	+		1	0 TR	_	0 LT	1	_		0	1	0		-	-	-
Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked	+		1	0 TR	_	0 LT 64	1	_		0 26 0	1 LR	0		-	-	-
Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%)	+		1	0 TR	_	0 LT 64	1	_		0 26 0	1	0		-	-	-
Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized	+		1	0 TR 61	0	0 LT 64	1	_		0 26 0	1 LR	0		-	-	-
Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage	0	0	1	0 TR 61	_	0 LT 64	1	_		0 26 0	1 LR	0		-	-	-
Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up He	0	0	1	0 TR 61	0	0 LT 64 0	1	_		0 26 0	1 LR	0 18 6		-	-	-
Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up Ho	0	0	1	0 TR 61	0	0 LT 64 0	1	_		0 26 0	1 LR	0 18 6		-	-	-
Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up Ho Base Critical Headway (sec)	0	0	1	0 TR 61	0	0 LT 64 0	1	_		7.1 6.40	1 LR	0 18 6		-	-	-
Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up Ho Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec)	0	0	1	0 TR 61	0	0 LT 64 0	1	_		7.1 6.40 3.5	1 LR	6.2 6.26 3.3		-	-	-
Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up He Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec)	0 eadwa	ys	162	0 TR 61	0	0 LT 64 0	1	_		7.1 6.40	1 LR	0 18 6		-	-	-
Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up Ho Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, and	0 eadwa	ys	162	0 TR 61	0	0 LT 64 0 4.1 4.10 2.2 2.20	1	_		7.1 6.40 3.5	1 LR	6.2 6.26 3.3		-	-	-
Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up Ho Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, and Flow Rate, v (veh/h)	0 eadwa	ys	162	0 TR 61	0	0 LT 64 0 4.1 4.10 2.2 2.20	1	_		7.1 6.40 3.5	1 LR	6.2 6.26 3.3		-	-	-
Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up He Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Pelay, Queue Length, and Flow Rate, v (veh/h) Capacity, c (veh/h)	0 eadwa	ys	162	0 TR 61	0	0 LT 64 0 4.1 4.10 2.2 2.20	1	_		7.1 6.40 3.5	1 LR 0 51 433	6.2 6.26 3.3		-	-	-
Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up Ho Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Pollow-Up Headway (sec) Tollow-Up Headway (sec) Follow-Up Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, and Flow Rate, v (veh/h) Capacity, c (veh/h)	0 eadwa	ys	162	0 TR 61	0	0 LT 64 0 4.1 4.10 2.2 2.20 74 1320 0.06	1	_		7.1 6.40 3.5	1 LR 0 0 51 433 0.12	6.2 6.26 3.3		-	-	-
Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up Ho Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, and Flow Rate, v (veh/h) Capacity, c (veh/h) v/c Ratio 95% Queue Length, Q ₉₅ (veh)	0 eadwa	ys	162	0 TR 61	0	0 LT 64 0 	1	_		7.1 6.40 3.5	1 LR 0 0 51 433 0.12 0.4	6.2 6.26 3.3		-	-	-
Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up Ho Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, and Flow Rate, v (veh/h) Capacity, c (veh/h) v/c Ratio 95% Queue Length, Q ₉₅ (veh) Control Delay (s/veh)	0 eadwa	ys	162	0 TR 61	0	0 LT 64 0 4.1 4.10 2.2 2.20 74 1320 0.06 0.2 7.9	1	_		7.1 6.40 3.5	1 LR 0 51 433 0.12 0.4 14.4	6.2 6.26 3.3		-	-	-
Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up Ho Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, and Flow Rate, v (veh/h) Capacity, c (veh/h) v/c Ratio 95% Queue Length, Q ₉₅ (veh)	0 eadwa	ys	162	0 TR 61	0	0 LT 64 0 	1	_		7.1 6.40 3.5 3.50	1 LR 0 0 51 433 0.12 0.4	6.2 6.26 3.3		-	-	-

Broad Run PM 21.xtw

		Н	ICS7	Two-	-Way	Stop	o-Co	ntrol	Rep	ort						
General Information	_						Site	Inforn	natio	n						
Analyst	DBZ						Inters	ection			Seato	nville at	Broad R	lun		
Agency/Co.	Diane	e B Zimn	nerman 1	raffic En	gineerin	g	Jurisd	iction								
Date Performed	7/9/2						East/\	Nest Stre	et		Seato	nville Ro	ad			
Analysis Year	2028						North	/South 9	Street		Broad	l Run				
Time Analyzed	PM P	eak No I	Build				Peak	Hour Fac	tor		0.87					
Intersection Orientation	East-	West					Analy	sis Time	Period (hrs)	0.25					
Project Description	Broad	d Run														
Lanes																
				0 7 4 4 Y 4 Y 7	\ Nai	Y Or Street: Ea	IF □	¥ ↑ ¼ ♦ ₹ C O								
Vehicle Volumes and Adj	ustme	nts			9											
Approach	<u> </u>	Eastl	oound			Westl	oound			North	bound			South	bound	_
Movement	U	L	Т	R	U	L	T	R	U	L	T	R	U	L	T	F
Priority	10	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	1	0		0	0	0
Configuration				TR		LT					LR					上
Volume (veh/h)			174	65		69	408			28		19				┖
Percent Heavy Vehicles (%)						0				0		6				┖
Proportion Time Blocked																
Percent Grade (%)										(0					
Right Turn Channelized																
Median Type Storage				Undi	vided											
Critical and Follow-up He	eadwa	ys														
Base Critical Headway (sec)	Т	П	Т			4.1				7.1		6.2			П	Т
Critical Headway (sec)						4.10				6.40		6.26				\vdash
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.20				3.50		3.35				
Delay, Queue Length, and	d Leve	l of S	ervice													
Flow Rate, v (veh/h)	Т					79					54					\sqcap
Capacity, c (veh/h)						1300					400					
v/c Ratio						0.06					0.13					П
95% Queue Length, Q ₉₅ (veh)						0.2					0.5					
Control Delay (s/veh)						7.9					15.4					
Level of Service (LOS)						А					С					
						1	.7			15	5.4					
Approach Delay (s/veh)	1															

Broad Run PM 28 NB.xtw

			ICS/	IWO-	-Way	Stop	o-Co	ntrol	кер	ort						
General Information							Site	Inforr	natio	n						
Analyst	DBZ						Inters	ection			Seato	nville at	Broad R	Run		
Agency/Co.	Diane	B Zimn	nerman ⁻	Fraffic En	gineerin	g	Jurisd	liction								
Date Performed	4/11/	22					East/\	Nest Stre	eet		Seato	nville Ro	ad			
Analysis Year	2028						North	/South S	Street		Broad	l Run				
Time Analyzed	PM Po	eak Buil	d				Peak	Hour Fac	tor		0.87					
Intersection Orientation	East-\	West					Analy	sis Time	Period (hrs)	0.25					
Project Description	Broad	d Run														
Lanes																
				A 7 4 4 7 ↑ ↑ ↑		マーク マーク or Street: Ea		4 + 4 4 4 6 6								
ehicle Volumes and Ad	ljustme	nts														
Approach	\perp	Eastl	oound			Westl	oound			North	bound			South	bound	_
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	1
Number of Lanes	0	0	1	0	0	1	1	0		0	1	0		0	0	
Configuration				TR		L	Т				LR					L
Volume (veh/h)			174	148		194	408			77		93				L
Percent Heavy Vehicles (%)						1				1		6				上
Proportion Time Blocked																L
Percent Grade (%)											0					
Right Turn Channelized																
Median Type Storage				Left	Only								1			
Critical and Follow-up F	leadwa	ys														
Base Critical Headway (sec)						4.1				7.1		6.2				
Critical Headway (sec)						4.11				6.41		6.26				П
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.21				3.51		3.35				
Delay, Queue Length, ar	nd Leve	l of S	ervice	,												
Flow Rate, v (veh/h)	\top					223					195					Г
riow rate, v (verijiri)						1194					407					T
Capacity, c (veh/h)	$\overline{}$					0.19					0.48					
						0.7					2.5					
Capacity, c (veh/h)											21.7					
Capacity, c (veh/h) v/c Ratio						8.7									l	1
Capacity, c (veh/h) v/c Ratio 95% Queue Length, Q ₉₅ (veh)						8.7 A					С					
Capacity, c (veh/h) v/c Ratio 95% Queue Length, Q ₉₅ (veh) Control Delay (s/veh)						А	.8			2.	_					

		H	ICS7	Two-	-Way	Stop	o-Co	ntrol	Rep	ort						
General Information							Site	Inforr	natio	n						
Analyst	DBZ						Inters	ection			Seato	nville at	Brentlin	ge		
Agency/Co.	Diane	B Zimn	nerman 1	raffic En	gineerin	g	Jurisd	liction								
Date Performed	6/23/	2021					East/\	Nest Str	eet		Seato	onville Ro	ad			
Analysis Year	2021						North	/South :	Street		Brent	linger				
Time Analyzed	AM P	eak					Peak	Hour Fac	tor		0.82					
Intersection Orientation	East-\	Nest					Analy	sis Time	Period (hrs)	0.25					
Project Description	Broad	l Run														
Lanes																
				5 7 4 4 7 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		Y Y Y 1 or Street: Ea	t-West	4 + 4 4 4 0								
Vehicle Volumes and Ad	ustme	nts														
Approach	\bot	Eastl	oound			Westl	ound			North	bound			South	bound	
Movement	U	L	T	R	U	L	T	R	U	L	Т	R	U	L	T	
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	1
Number of Lanes	0	0	1	0	0	0	1	0		0	1	0		0	0	
Configuration	\bot			TR		LT					LR					╄
Volume (veh/h)	\bot		41	4		58	66			2		157				╄
Percent Heavy Vehicles (%)						0				0		0				╄
Proportion Time Blocked	\bot															L
Percent Grade (%)	\bot										0					
Right Turn Channelized																
Median Type Storage	<u></u>			Undi	vided				<u> </u>							_
Critical and Follow-up H	eadwa	ys														
Base Critical Headway (sec)						4.1				7.1		6.2				
Critical Headway (sec)						4.10				6.40		6.20				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				L
Follow-Up Headway (sec)						2.20				3.50		3.30				L
Delay, Queue Length, an	d Leve	l of S	ervice													
belay, Queue Length, an	T					71					194					Т
Flow Rate, v (veh/h)						1563					1015					
						0.05					0.19					Γ
Flow Rate, v (veh/h)											0.7					1
Flow Rate, v (veh/h) Capacity, c (veh/h)						0.1					0.7					
Flow Rate, v (veh/h) Capacity, c (veh/h) v/c Ratio						0.1 7.4					9.4					۲
Flow Rate, v (veh/h) Capacity, c (veh/h) v/c Ratio 95% Queue Length, Qos (veh)						_					_					H
Flow Rate, v (veh/h) Capacity, c (veh/h) v/c Ratio 95% Queue Length, Q ₉₅ (veh) Control Delay (s/veh)						7.4 A	.7			9	9.4					

		Н	ICS7	Two-	-Way	Stop	o-Co	ntrol	Rep	ort						
General Information							Site	Inforr	natio	1						_
Analyst	DBZ						Inters	ection			Seato	nville at	Brentlin	ge		_
Agency/Co.	Diane	B Zimn	nerman T	raffic En	aineerin	a	_	liction								
Date Performed	6/23/						East/\	Nest Stre	eet		Seato	nville Ro	ad			
Analysis Year	2028						_	/South S			Brent	linger				
Time Analyzed	AM P	eak No	Build					Hour Fac			0.82					_
Intersection Orientation	East-\	Nest					Analy	sis Time	Period (hrs)	0.25					
Project Description	Broad	I Run														
Lanes																
				1744Y17C		Y Y Y 1 or Street: Ea	t -West	4 + 1.4 + 1.0								
Vehicle Volumes and Adj	justme	nts														
Approach	\perp	Eastl	ound			Westl	oound			North	bound			South	bound	_
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	L
Priority	10	1	2	3	4U	4	5	6		7	8	9		10	11	
Number of Lanes	0	0	1	0	0	0	1	0		0	1	0		0	0	L
Configuration				TR		LT					LR					L
Volume (veh/h)			44	4		62	71			2		168				L
						0				0		0				L
Percent Heavy Vehicles (%)	_															L
Percent Heavy Vehicles (%) Proportion Time Blocked											0					
Proportion Time Blocked																
Proportion Time Blocked Percent Grade (%)				Undi	vided											
Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage	eadwa	ys		Undi	vided											
Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage	eadwa	ys		Undi	vided	4.1				7.1		6.2				
Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up H	eadwa	ys		Undi	vided	4.1						6.2				
Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up H Base Critical Headway (sec)	eadwa	ys		Undi	vided	-				7.1						
Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec)	eadwa	ys		Undi	vided	4.10				7.1 6.40		6.20				
Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec)			ervice		vided	4.10 2.2				7.1 6.40 3.5		6.20 3.3				
Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec)			ervice		vided	4.10 2.2				7.1 6.40 3.5	207	6.20 3.3				
Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, an			ervice		vided	4.10 2.2 2.20				7.1 6.40 3.5		6.20 3.3				
Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, an Flow Rate, v (veh/h)			ervice		vided	4.10 2.2 2.20 76				7.1 6.40 3.5	207	6.20 3.3				
Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, an Flow Rate, v (veh/h) Capacity, c (veh/h)			ervice		vided	4.10 2.2 2.20 76 1558				7.1 6.40 3.5	207	6.20 3.3				
Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, an Flow Rate, v (veh/h) Capacity, c (veh/h) v/c Ratio			ervice		vided	4.10 2.2 2.20 76 1558 0.05				7.1 6.40 3.5	207 1010 0.21	6.20 3.3				
Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, an Flow Rate, v (veh/h) Capacity, c (veh/h) v/c Ratio 95% Queue Length, Q ₉₅ (veh)			ervice		vided	4.10 2.2 2.20 76 1558 0.05 0.2				7.1 6.40 3.5	207 1010 0.21 0.8	6.20 3.3				
Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, an Flow Rate, v (veh/h) Capacity, c (veh/h) v/c Ratio 95% Queue Length, Q ₉₅ (veh) Control Delay (s/veh)			ervice		vided	4.10 2.2 2.20 76 1558 0.05 0.2 7.4 A	.7			7.1 6.40 3.5 3.50	207 1010 0.21 0.8 9.5	6.20 3.3				

		H	ICS7	Two-	-Way	Stop	o-Co	ntrol	Rep	ort						
General Information							Site	Inforr	natio	n						_
Analyst	DBZ						Inters	ection			Seato	nville at	Brentlin	nge		
Agency/Co.	_	B Zimn	nerman 1	Fraffic En	gineerin	g	Jurisd									
Date Performed	3/10/						East/\	Nest Stre	eet		Seato	nville Ro	ad			
Analysis Year	2028							/South S			Brent	linger				
Time Analyzed	AM P	eak Buil	d				_	Hour Fac			0.82					
Intersection Orientation	East-\	Nest						sis Time		hrs)	0.25					
Project Description	Broad									,						
Lanes																
				A 7 4 4 7 4 7 7 7 7 7 7 7 7 7 7 7 7 7 7		イ サイ f or Street: Ea	t -Vest	4 4 4 4 4 4 4								
Vehicle Volumes and Ad	justme	nts														
Approach	\perp	Eastl	oound			Westl	oound			North	bound			South	bound	
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	1
Number of Lanes	0	0	1	0	0	0	1	0		0	1	0		0	0	(
Configuration				TR		LT					LR					上
Volume (veh/h)			60	4		90	117			2		177				\perp
Percent Heavy Vehicles (%)						0				0		0		<u> </u>		╙
Proportion Time Blocked																
Percent Grade (%)	\bot										0					
Right Turn Channelized	+-															
Median Type Storage				Undi	vided											
Critical and Follow-up F	leadwa	ys														
Base Critical Headway (sec)						4.1				7.1		6.2				
Critical Headway (sec)						4.10				6.40		6.20				
						2.2				3.5		3.3				\perp
Base Follow-Up Headway (sec)						2.20				3.50		3.30				
Base Follow-Up Headway (sec) Follow-Up Headway (sec)																
	nd Leve	l of S	ervice													
Follow-Up Headway (sec)	nd Leve	l of S	ervice			110					218					1
Follow-Up Headway (sec) Delay, Queue Length, ar	nd Leve	l of S	ervice			110 1533					218 982					
Follow-Up Headway (sec) Delay, Queue Length, ar Flow Rate, v (veh/h)	nd Leve	l of S	ervice			_										
Follow-Up Headway (sec) Delay, Queue Length, an Flow Rate, v (veh/h) Capacity, c (veh/h)	nd Leve	l of S	ervice			1533					982					
Follow-Up Headway (sec) Pelay, Queue Length, ar Flow Rate, v (veh/h) Capacity, c (veh/h) v/c Ratio	nd Leve	l of S	ervice			1533 0.07					982 0.22					
Follow-Up Headway (sec) Pelay, Queue Length, and Flow Rate, v (veh/h) Capacity, c (veh/h) v/c Ratio 95% Queue Length, Q ₉₅ (veh)	nd Leve	l of S	ervice			1533 0.07 0.2					982 0.22 0.9					
Follow-Up Headway (sec) Pelay, Queue Length, and Flow Rate, v (veh/h) Capacity, c (veh/h) v/c Ratio 95% Queue Length, Q ₉₅ (veh) Control Delay (s/veh)	nd Leve	l of S	ervice			1533 0.07 0.2 7.5 A	.6			9	982 0.22 0.9 9.7					

		Н	ICS7	Two-	-Way	Stop	o-Co	ntrol	Rep	ort						
General Information							Site	Inform	natio	n						_
Analyst	DBZ						Inters	ection			Seato	nville at	Brentlin	ge		_
Agency/Co.	Diane	B Zimn	nerman T	raffic En	gineerin	g	Juriso	liction								
Date Performed	6/23/	2021					East/\	West Str	eet		Seato	nville Ro	ad			
Analysis Year	2021						North	n/South :	Street		Brent	linger				
Time Analyzed	PM P	eak					Peak	Hour Fac	ctor		0.88					
Intersection Orientation	East-\	West					Analy	sis Time	Period (hrs)	0.25					
Project Description	Broad	d Run														
Lanes																
				5 J 4 ← √ → ▼ ¬	To The Majo	T Y Y	st-West	• ₹ C G								
Vehicle Volumes and Adj	ustme															
							hound				haund		ı	South	hound	
Approach	ļ	Eastb				Westl				North					_	_
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	Т	-
Movement Priority	1U	L 1	T 2	3	4U	L 4	T 5	6	U	L 7	T 8	9	U	L 10	T 11	
Movement Priority Number of Lanes	+	L	T	3		L 4 0	T	_	U	L	8 1	_	U	L	Т	
Movement Priority Number of Lanes Configuration	1U	L 1	T 2 1	3 0 TR	4U	L 4 0 LT	T 5	6	U	7 0	T 8	9	U	L 10	T 11	
Movement Priority Number of Lanes Configuration Volume (veh/h)	1U	L 1	T 2	3	4U	L 4 0 LT 331	T 5	6	U	L 7 0 7	8 1	9 0 85	U	L 10	T 11	
Movement Priority Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%)	1U	L 1	T 2 1	3 0 TR	4U	L 4 0 LT	T 5	6	U	7 0	8 1	9	U	L 10	T 11	
Movement Priority Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked	1U	L 1	T 2 1	3 0 TR	4U	L 4 0 LT 331	T 5	6	U	7 0 7 0	T 8 1 LR	9 0 85	U	L 10	T 11	
Movement Priority Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%)	1U	L 1	T 2 1	3 0 TR	4U	L 4 0 LT 331	T 5	6	U	7 0 7 0	8 1	9 0 85	U	L 10	T 11	
Movement Priority Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized	1U	L 1	T 2 1	3 0 TR 28	4U	L 4 0 LT 331	T 5	6	U	7 0 7 0	T 8 1 LR	9 0 85	U	L 10	T 11	
Movement Priority Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage	10 0	L 1 0	T 2 1	3 0 TR 28	4U 0	L 4 0 LT 331	T 5	6	U	7 0 7 0	T 8 1 LR	9 0 85	U	L 10	T 11	
Movement Priority Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage	10 0	L 1 0	T 2 1	3 0 TR 28	4U 0	L 4 0 LT 331	T 5	6	U	7 0 7 0	T 8 1 LR	9 0 85	U	L 10	T 11	
Movement Priority Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up He	10 0	L 1 0	T 2 1	3 0 TR 28	4U 0	L 4 0 LT 331 1	T 5	6	U	7 0	T 8 1 LR	9 0 85 2	U	L 10	T 11	
Movement Priority Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up Ho	10 0	L 1 0	T 2 1	3 0 TR 28	4U 0	L 4 0 LT 331 1	T 5	6	U	7 0 7 0	T 8 1 LR	9 0 85 2	U	L 10	T 11	
Movement Priority Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up He Base Critical Headway (sec) Critical Headway (sec)	10 0	L 1 0	T 2 1	3 0 TR 28	4U 0	L 4 0 LT 331 1	T 5	6	U	7 0 7 0 7 1 6.40	T 8 1 LR	9 0 85 2 6.2 6.22	U	L 10	T 11	
Movement Priority Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up He Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec)	1U 0	ys	T 2 1 1 139	3 0 TR 28 Undi	4U 0	L 4 0 LT 331 1 1 4.1 4.11 2.2	T 5	6	U	7 0 7 0 7.1 6.40 3.5	T 8 1 LR	9 0 85 2 6.2 6.22 3.3	U	L 10	T 11	-
Movement Priority Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up House Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec)	1U 0	ys	T 2 1 1 139	3 0 TR 28 Undi	4U 0	L 4 0 LT 331 1 1 4.1 4.11 2.2	T 5	6	U	7 0 7 0 7.1 6.40 3.5	T 8 1 LR	9 0 85 2 6.2 6.22 3.3	U	L 10	T 11	-
Movement Priority Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up Hease Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, and	1U 0	ys	T 2 1 1 139	3 0 TR 28 Undi	4U 0	L 4 0 LT 331 1 1 4.1 4.11 2.2 2.21	T 5	6	U	7 0 7 0 7.1 6.40 3.5	T 8 1 LR 00	9 0 85 2 6.2 6.22 3.3	U	L 10	T 11	-
Movement Priority Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up Hease Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, an Flow Rate, v (veh/h)	1U 0	ys	T 2 1 1 139	3 0 TR 28 Undi	4U 0	L 4 0 LT 331 1 1 4.11 2.2 2.21 376	T 5	6		7 0 7 0 7.1 6.40 3.5	T 8 1 LR 0 0 105	9 0 85 2 6.2 6.22 3.3	U	L 10	T 11	-
Movement Priority Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up House (Storage) Base Critical Headway (Sec) Critical Headway (Sec) Base Follow-Up Headway (Sec) Follow-Up Headway (Sec) Delay, Queue Length, and Flow Rate, v (veh/h) Capacity, c (veh/h)	1U 0	ys	T 2 1 1 139	3 0 TR 28 Undi	4U 0	L 4 0 LT 331 1 1	T 5	6		7 0 7 0 7.1 6.40 3.5	T 8 1 LR 00 0 105 686	9 0 85 2 6.2 6.22 3.3	U	L 10	T 11	-
Movement Priority Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, an Flow Rate, v (veh/h) Capacity, c (veh/h) v/c Ratio	1U 0	ys	T 2 1 1 139	3 0 TR 28 Undi	4U 0	L 4 0 LT 331 1 1 4.1 4.11 2.2 2.21 376 1390 0.27	T 5	6		7 0 7 0 7.1 6.40 3.5	T 8 1 LR 0 0 105 686 0.15	9 0 85 2 6.2 6.22 3.3	U	L 10	T 11	-
Movement Priority Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage Critical and Follow-up Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Pelay, Queue Length, and Flow Rate, v (veh/h) Capacity, c (veh/h) v/c Ratio 95% Queue Length, Q ₉₅ (veh)	1U 0	ys	T 2 1 1 139	3 0 TR 28 Undi	4U 0	L 4 0 LT 331 1 1 4.1 4.11 2.2 2.21 376 1390 0.27 1.1	T 5	6		7 0 7 0 7.1 6.40 3.5	T 8 1 LR 00 0 105 686 0.15 0.5	9 0 85 2 6.2 6.22 3.3		L 10	T 11	-

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		Н	ICS7	Two-	-Way	Stop	o-Co	ntrol	Rep	ort						
General Information							Site	Inforn	natio	1						_
Analyst	DBZ						Inters	ection			Seato	nville at	Brentlin	ge		
Agency/Co.	Diane	B Zimn	nerman 1	raffic En	gineerin	q	Jurisd									
Date Performed	7/9/20						East/\	Nest Stre	et		Seato	nville Ro	ad			_
Analysis Year	2028						North	/South S	Street		Brent	linger				
Time Analyzed	PM Pe	eak No I	Build					Hour Fac			0.88					
Intersection Orientation	East-V	Vest					Analy	sis Time	Period (hrs)	0.25					
Project Description	Broad	Run														_
Lanes																
				5 7 4 4 X → X C	Majo	Y Y Y 1 or Street: Ea	t-West	4 + 4 + 4 0								
Vehicle Volumes and Adj	ustme	nts														
Approach		Eastb	ound			Westl	oound			North	bound			South	bound	_
Movement	U	L	T	R	U	L	Т	R	U	L	T	R	U	L	Т	L
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	Ŀ
Number of Lanes	0	0	1	0	0	0	1	0		0	1	0		0	0	L
Configuration	\bot			TR		LT					LR					L
Volume (veh/h)	\bot		149	30		355	83			8		91				L
Percent Heavy Vehicles (%)	\bot					1				0		2				L
Proportion Time Blocked	\bot															L
	+										0					
Percent Grade (%)																
Right Turn Channelized				Undi	vided											
Right Turn Channelized Median Type Storage				Offul												
Right Turn Channelized Median Type Storage	eadway	ys		Olidi												т
Right Turn Channelized Median Type Storage	eadway	ys		Olldi		4.1				7.1		6.2				_
Right Turn Channelized Median Type Storage Critical and Follow-up H	eadway	ys		Ondi		4.1 4.11				7.1 6.40		6.22				
Right Turn Channelized Median Type Storage Critical and Follow-up H Base Critical Headway (sec)	eadwa	ys		Olidi		-				_						
Right Turn Channelized Median Type Storage Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec)	eadwa	ys		Ondi		4.11				6.40		6.22				
Right Turn Channelized Median Type Storage Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec)			ervice			4.11 2.2				6.40 3.5		6.22 3.3				
Right Turn Channelized Median Type Storage Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec)			ervice			4.11 2.2				6.40 3.5	113	6.22 3.3				
Right Turn Channelized Median Type Storage Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, an			ervice			4.11 2.2 2.21				6.40 3.5	113	6.22 3.3				
Right Turn Channelized Median Type Storage Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, an Flow Rate, v (veh/h)			ervice			4.11 2.2 2.21 403				6.40 3.5		6.22 3.3				
Right Turn Channelized Median Type Storage Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, an Flow Rate, v (veh/h) Capacity, c (veh/h)			ervice			4.11 2.2 2.21 403 1374				6.40 3.5	641	6.22 3.3				
Right Turn Channelized Median Type Storage Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, an Flow Rate, v (veh/h) Capacity, c (veh/h) v/c Ratio			ervice			4.11 2.2 2.21 403 1374 0.29				6.40 3.5	641 0.18	6.22 3.3				
Right Turn Channelized Median Type Storage Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, an Flow Rate, v (veh/h) Capacity, c (veh/h) v/c Ratio 95% Queue Length, Q ₉₅ (veh)			ervice			4.11 2.2 2.21 403 1374 0.29 1.2				6.40 3.5	641 0.18 0.6	6.22 3.3				
Right Turn Channelized Median Type Storage Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, an Flow Rate, v (veh/h) Capacity, c (veh/h) v/c Ratio 95% Queue Length, Q ₉₅ (veh) Control Delay (s/veh)			ervice			4.11 2.2 2.21 403 1374 0.29 1.2 8.7 A	.6			6.40 3.5 3.50	0.18 0.6 11.8	6.22 3.3				

Date Performed 3/ Analysis Year 20 Time Analyzed PM Intersection Orientation Ea Project Description Br Lanes Vehicle Volumes and Adjustn Approach Movement U Priority 11 Number of Lanes 0 Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage	inne B Zi 10/0/2022 8 Il Peak B 10 P	astb		R R 3 0 TR 30	กา	. ↓ ↓ ↓ ↑ ↑ ↑ ↑	Inters Jurisd East/N North Peak I Analy	Rection diction West Streen/South S Hour Face risis Time R R G O	eet Street	hrs)	Seato	onville at onville Rocilinger			bound T 11 0	F 1 1 (
Agency/Co. Di Date Performed 3/ Analysis Year 20 Time Analyzed PM Intersection Orientation Ea Project Description Br Lanes Vehicle Volumes and Adjustn Approach Movement U Priority 11 Number of Lanes 0 Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage	nene B Zi 10/202228 Il Peak B Il Peak B Daad Run	astb	oound T 2 1	R 3 0 TR	U 4U	Westi L 4 0 LT	Jurisd East/\ North Peak Analy	West Stree West Stree West Stree Hour Face Sis Time R R 6	Street ctor Period (I	North	Seato Brent 0.88 0.25	enville Ro	pad	South L 10	T 11	1
Date Performed 3/ Analysis Year 20 Time Analyzed PM Intersection Orientation Ea Project Description Br Lanes Vehicle Volumes and Adjustn Approach Movement U Priority 11. Number of Lanes 0 Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage	Depth of the control	astb	oound T 2 1	R 3 0 TR	U 4U	Westi L 4 0 LT	East/\ North Peak Analy	West Streen/South S Hour Face sis Time R R 6	Street ctor Period (I	North	0.88 0.25 bound T 8 1	R 9		L 10	T 11	1
Analysis Year 20 Time Analyzed PM Intersection Orientation Ea Project Description Bro Lanes Vehicle Volumes and Adjustin Approach Movement U Priority 11 Number of Lanes 0 Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage	I Peak B I P	astb	oound T 2	R 3 0 TR	Maj	Westl L 4 0 LT	North Peak Analy StWest	N/South S Hour Fac rsis Time R R	Street ctor Period (I	North	0.88 0.25 bound T 8 1	R 9		L 10	T 11	1
Time Analyzed PA Intersection Orientation Ea Project Description Br Lanes Vehicle Volumes and Adjustn Approach Movement U Priority 1t Number of Lanes 0 Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage	nents Ea L 1	astb	oound T 2	R 3 0 TR	Maj	Westl L 4 0 LT	Peak Analy	Hour Face sis Time	tor Period (I	North	0.88 0.25 bound T 8	R 9	U	L 10	T 11	
Intersection Orientation Ea Project Description Br Lanes Vehicle Volumes and Adjustn Approach Movement U Priority 11 Number of Lanes 0 Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage	nents Ea L 1	astb	oound T 2	R 3 0 TR	Maj	Westl L 4 0 LT	Analy Analy St. West Dound T 5	rsis Time	Period (I	North	0.25	9	U	L 10	T 11	
Project Description Lanes Vehicle Volumes and Adjustn Approach Movement Uriority Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage	eents Ea	astb	T 2 1	R 3 0 TR	Maj	Westl L 4 0 LT	st-West	₩ ₩ ₩ ₩ ₩ ₩ ₩ ₩ ₩ ₩ ₩ ₩ ₩ ₩ ₩ ₩ ₩ ₩ ₩		North	bound T 8	9	U	L 10	T 11	
Vehicle Volumes and Adjustn Approach Movement UPriority Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage	Ea L	astb	T 2 1	R 3 0 TR	Maj	Westl L 4 0 LT	st-West	R 6	U	L 7	8 1	9	U	L 10	T 11	
Vehicle Volumes and Adjustn Approach Movement U Priority 1t Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage	Ea	astb	T 2 1	R 3 0 TR	Maj	Westl L 4 0 LT	st-West	R 6	U	L 7	8 1	9	U	L 10	T 11	
Movement U Priority 1U Number of Lanes 0 Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage	Ea	astb	T 2 1	R 3 0 TR	Maj	Westl L 4 0 LT	st-West	R 6	U	L 7	8 1	9	U	L 10	T 11	
Approach Movement U Priority 1U Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage	Ea	astb	T 2 1	3 0 TR	4U	L 4 0 LT	T 5	6	U	L 7	8 1	9	U	L 10	T 11	1
Movement U Priority 1U Number of Lanes 0 Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage	L 1	-	T 2 1	3 0 TR	4U	L 4 0 LT	T 5	6	U	L 7	8 1	9	U	L 10	T 11	
Priority 1U Number of Lanes 0 Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage	1		2	3 0 TR	4U	4 0 LT	5	6	U	7	8	9	U	10	11	
Number of Lanes 0 Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage	-	-	1	0 TR	_	0 LT		-			1				_	-
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Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage			201	_		_		1)			LIN				\vdash	
Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage			201	30			114			8		122	l .			\vdash
Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type Storage	+			1		1	114			0		2			_	₩
Percent Grade (%) Right Turn Channelized Median Type Storage						<u> </u>				0		-				\vdash
Right Turn Channelized Median Type Storage											0					_
Median Type Storage										``						
		_		Undi	ivided											_
	ays															
Base Critical Headway (sec)	Ť					4.1				7.1		6.2				Т
Critical Headway (sec)						4.11				6.40		6.22				T
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.21				3.50		3.32				
Delay, Queue Length, and Le	el of	Se	ervice													
Flow Rate, v (veh/h)	T			Г	Т	424					148	Г				Т
Capacity, c (veh/h)	+					1308					604					
v/c Ratio						0.32					0.24					T
95% Queue Length, Q ₉₅ (veh)						1.4					1.0					T
Control Delay (s/veh)						9.1					12.9					T
Level of Service (LOS)						А					В					
Approach Delay (s/veh)						7	.7			12	2.9					

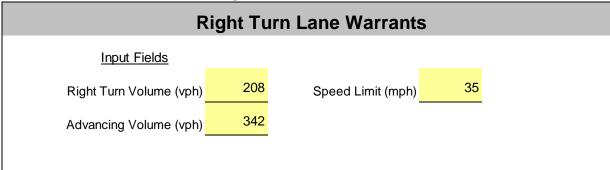
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Right Turn Warrant at Entrance





Note: This spreadsheet is intended to supplement the guidance provided in the Auxiliary Turn Lane policy outlined in the KYTC Highway Design Manual. This policy should be fully reviewed and understood prior to using this application.